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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,828	07/15/2003	Yi-Ming Sheu	TSM03-0140	7191

43859 7590 04/21/2008

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EXAMINER	
MOVVA, AMAR	

ART UNIT	PAPER NUMBER
2891	

MAIL DATE	DELIVERY MODE
04/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/619,828	SHEU ET AL.	
	Examiner	Art Unit	
	AMAR MOVVA	2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Yu '218. Yu discloses a transistor device comprising: a semiconductor region having a top surface; a source region (22, fig. 1) in the semiconductor region; a drain region (24, fig. 1) in the semiconductor region; a channel region in the semiconductor region between the source region and the drain region; an impurity region (35, fig. 1) within the channel region and spaced from the top surface, the impurity region having a first outer boundary that is proximate, but laterally spaced apart from the source region and a second outer boundary proximate, but laterally spaced apart from the drain region (fig. 1); a gate (36, fig. 1) overlying the channel region; and a gate dielectric (34, fig. 1) between the gate and the channel region. . The semiconductor region comprises a silicon substrate (fig. 1). The source and drain regions extend into the semiconductor region a first distance, and wherein the impurity region is spaced from the top surface by a distance less than the first distance (fig. 1). The gate dielectric comprises silicon dioxide (lines 25-35, col. 5). The impurity region comprises a region of an implanted oxygen bearing species in the channel region (fig. 1). A first sidewall spacer (32, fig. 1) adjacent a first sidewall of the gate; a second sidewall spacer (32, fig. 1) adjacent a

second sidewall of the gate; a lightly doped drain region within the semiconductor region adjacent the drain region (lines 60-65, col. 4), the lightly doped drain region disposed beneath the first sidewall; and a lightly doped source region (lines 60-65, col. 4) within the semiconductor region adjacent the source region, the lightly doped source region disposed beneath the second sidewall.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 7, 9, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu '218 in view of Murota '289.

a. Yu discloses the device of claim 1 and that the transistor device can be either a PMOS or NMOS (col. 6). Yu, however, does not expressly disclose that the semiconductor region comprises a region of monocrystalline silicon, the channel region comprises a strained channel region, and/or the device may have a CMOS implementation.

b. Murota discloses a transistor device wherein the semiconductor region comprises a region of monocrystalline silicon [0031], the channel region comprises a strained channel region [0028], and/or the device may have a CMOS implementation [0034].

c. It would have been obvious to one of ordinary skill in the art to have strained the channel, made the semiconductor region out of monocrystalline silicon, and used a CMOS implementation in Yu's device in order to increase device speed and allow for Yu's invention in various applications (e.g. CMOS inverters, etc.).

5. Claims 1, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu '218.

a. Yu discloses the device of claim 1 and at least a second transistor (inherent as the transitor is comprised in a integrated circuit comprising numerous transistors. Yu however does not expressly disclose that the second transistor to not comprise an impurity region below the gate dielectric.

b. Nevertheless it would have been obvious to one of ordinary skill in the art at the time of the invention to have had the second transistor to not comprise an impurity region below the gate dielectric. since it has been held that omission of an element and its function is obvious if the function of the element is not desired *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). In the instant case this would be to allow for the elimination of the BOX oxide and reference 35 which is effective in reducing sub-threshold leakage but decreases device speed in logic application MOS transistors of the IC while retaining said element in power application MOS transistors of the IC.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMAR MOVVA whose telephone number is (571)272-9009. The examiner can normally be reached on 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amar Movva

Examiner
Art Unit 2891

AM

/BRADLEY W BAUMEISTER/
Supervisory Patent Examiner, Art Unit 2891